

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A stereo image processing apparatus subjecting first image data obtained from a first flying object (airframe) during a first time period to stereo matching processing to generate first three-dimensional data and subjecting second image data obtained from a second flying object during a second time period different from said first time period to stereo matching processing to generate second three-dimensional data, comprising:

data correcting means for correcting erroneous data ~~to be corrected~~ including at least noises and losses in ~~said inputted~~ three-dimensional data by using information of external ~~shapes~~ shapes of buildings obtained from map data, ~~including said information of external shape.~~ said data correcting means inputting said first three-dimensional data to provide first modified three-dimensional data and inputting said second three-dimensional data to provide second modified three-dimensional data;

map data storing means for storing said map data;

data storing means for storing said first modified three-dimensional data;

data comparing means for comparing said first modified three-dimensional data stored in said data storing means with said second modified three-dimensional data; and

map data modifying means for modifying said map data stored in said map data storing means based on differential information obtained from said data comparing means to provide modified two-dimensional map data.

2. (Currently Amended) The stereo image processing apparatus according to claim 1, wherein said data correcting means comprises:

registration means for superimposing said inputted three-dimensional data on said map data;

area data setting means for setting, for each building defining an area in the map data superimposed by said registration means, the inputted three-dimensional data included in the

~~area within the external shape thereof as the candidate area~~three-dimensional data of each building;

in-area histogram analysis means for obtaining, in each ~~area set by said area setting means~~, statistic information from the candidate three-dimensional data included in the area; and

data modifying means for modifying, based on the statistic information in each area obtained by said in-area histogram analysis means, the inputted three-dimensional data included in the area.

3. (Currently Amended) The stereo image processing apparatus according to claim 1, further comprising:

image storing means for storing said first image data.

4. (Cancelled)

5. (Cancelled)

6. (Currently Amended) The stereo image processing apparatus according to claim 1, wherein said first flying object is an artificial satellite, and said first image data is satellite image data obtained from said artificial satellite.

7. (Currently Amended) The stereo image processing apparatus according to claim 1, wherein said first flying object is an aircraft, and said first image data is aircraft image data obtained from said aircraft.

8. (Withdrawn) An stereo image processing apparatus subjecting image data obtained from a flying object (airframe) to stereo matching processing to generate three-dimensional data, comprising:

area information extracting means for extracting at least area information of land use on the map of roads/railroads/rivers/sea from map data including at least information of external shape of buildings; and

data correcting means for correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the area information from said area information extracting means.

9. (Withdrawn) The stereo image processing apparatus according to claim 8, wherein said data correcting means comprises:

registration means for superimposing said three-dimensional data on the area information from said area information extracting means;

area dividing means for setting, for each building in the map data superimposed by said registration means, three-dimensional data included in the area within the external shape thereof as the candidate area of each building and spatially dividing the three-dimensional data in accordance with the area information on said map data;

in-area histogram analysis means for obtaining, in each area set by said area setting means, statistic information from the three-dimensional data included in the area;

modification condition setting means for setting modification conditions of three-dimensional data corresponding to each area information of land use on said map data; and

data modifying means for modifying, based on the statistic information in each area obtained by said in-area histogram analysis means and the modification conditions set by said modification condition setting means, the three-dimensional data included in the area.

10. (Withdrawn) The stereo image processing apparatus according to claim 8, further comprising:

image storing means for storing said image data.

11. (Withdrawn) The stereo image processing apparatus according to claim 8, further comprising:

map data storing means for storing said map data.

12. (Withdrawn) The stereo image processing apparatus according to claim 11, further comprising:

data storing means for storing modified three-dimensional data outputted from said data correcting means;

data comparing means for comparing the three-dimensional data stored in said data storing means with the modified three-dimensional data outputted from said data correcting means; and

map data modifying means for modifying the map data stored in said map data storing means based on differential information obtained from said data comparing means.

13. (Withdrawn) The stereo image processing apparatus according to claim 8, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

14. (Withdrawn) The stereo image processing apparatus according to claim 8, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

15. (Withdrawn) A stereo image processing apparatus subjecting image data obtained from a flying object to stereo matching processing to generate three-dimensional data, comprising:

building external shape information detecting means for analyzing said image data to extract information of external shape of buildings; and

data correcting means for correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the information of external shape of buildings obtained from said building external shape information detecting means.

16. (Withdrawn) The stereo image processing apparatus according to claim 15, wherein said data correcting means comprises:

registration means for superimposing said three-dimensional data on information of external shape of buildings obtained from said building external shape information detecting means;

area setting means for setting, for each building in the map data superimposed by said registration means, three-dimensional data included in the area within the external shape thereof as the candidate area of each building;

in-area histogram analysis means for obtaining, in each area set by said area setting means, statistic information from the three-dimensional data included in the area; and

data modifying means for modifying, based on the statistic information in each area obtained by said in-area histogram analysis means, three-dimensional data included in the area.

17. (Withdrawn) The stereo image processing apparatus according to claim 15, further comprising:

image storing means for storing said image data.

18. (Withdrawn) The stereo image processing apparatus according to claim 15, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

19. (Withdrawn) The stereo image processing apparatus according to claim 15, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

20. (Withdrawn) An stereo image processing apparatus subjecting image data obtained from a flying object (airframe) to stereo matching processing to generate three-dimensional data, comprising:

building external shape information detecting means for analyzing said image data to extract information of external shape of buildings;

building external shape information comparing/combining means for comparing and combining the external shape information obtained from map data including at least information of external shape of buildings with the external shape information extracted from said building external shape information detecting means; and

data correcting means for correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the combined information from said building external shape information comparing/combining means.

21. (Withdrawn) The stereo image processing apparatus according to claim 20, wherein said data correcting means comprises:

registration means for superimposing said three-dimensional data on combined information from said building external shape information comparing/combining means;

area setting means for setting, for each building in the map data superimposed by said registration means, three-dimensional data included in the area within the external shape thereof as the candidate area of each building;

in-area histogram analysis means for obtaining, in each area set by said area setting means, statistic information from the three-dimensional data included in the area; and

data modifying means for modifying, based on the statistic information in each area obtained by said in-area histogram analysis means, three-dimensional data included in the area.

22. (Withdrawn) The stereo image processing apparatus according to claim 20, further comprising:

image storing means for storing said image data.

23. (Withdrawn) The stereo image processing apparatus according to claim 20, further comprising:

map data storing means for storing said map data.

24. (Withdrawn) The stereo image processing apparatus according to claim 23, further comprising:

data storing means for storing modified three-dimensional data outputted from said data correcting means;

data comparing means for comparing the three-dimensional data stored in said data storing means with the modified three-dimensional data outputted from said data correcting means; and

map data modifying means for modifying the map data stored in said map data storing means based on differential information obtained from said data comparing means.

25. (Withdrawn) The stereo image processing apparatus according to claim 20, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

26. (Withdrawn) The stereo image processing apparatus according to claim 20, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

27. (Withdrawn) An stereo image processing apparatus subjecting image data obtained from a flying object to stereo matching processing to generate three-dimensional data, comprising:
area information extracting means for extracting at least area information of land use on the map of roads/railroads/rivers/sea from map data including at least information of external shape of buildings;

building external shape information detecting means for analyzing said image data to extract information of external shape of buildings;

building external shape information comparing/combining means for comparing and combining the information of external shape of buildings obtained from said map data with the information of external shape of buildings extracted by said building external shape information detecting means; and

data correcting means for correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the combined information from said building external shape information comparing/combining means.

28. (Withdrawn) The stereo image processing apparatus according to claim 27, wherein said data correcting means comprises:

registration means for superimposing said three-dimensional data on combined information from said building external shape information comparing/combining means and the area information from said area information extracting means;

area dividing means for setting, for each building in the map data superimposed by said registration means, three-dimensional data included in the area within the external shape thereof as the candidate area of each building, and spatially dividing the three-dimensional data in accordance with the area information on said map data;

in-area histogram analysis means for obtaining, in each area set by said area dividing means, statistic information of the three-dimensional data included in the area;

modification condition setting means for setting modification conditions of three-dimensional data corresponding to each area information of land use on said map data; and

data modifying means for modifying, based on the statistic information in each area obtained by said in-area histogram analysis means and the modification conditions set by said modification condition setting means, the three-dimensional data included in the area.

29. (Withdrawn) The stereo image processing apparatus according to claim 27, further comprising:

image storing means for storing said image data.

30. (Withdrawn) The stereo image processing apparatus according to claim 27, further comprising:

map data storing means for storing said map data.

31. (Withdrawn) The stereo image processing apparatus according to claim 30, further comprising:

data storing means for storing modified three-dimensional data outputted from said data correcting means;

data comparing means for comparing the three-dimensional data stored in said data storing means with the modified three-dimensional data outputted from said data correcting means; and

map data modifying means for modifying the map data stored in said map data storing means based on differential information obtained from said data comparing means.

32. (Withdrawn) The stereo image processing apparatus according to claim 27, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

33. (Withdrawn) The stereo image processing apparatus according to claim 27, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

34. (Currently Amended) A method of processing first stereo images in which first image data obtained from a first flying object during a first time period is subjected to stereo matching processing to generate first three-dimensional data and processing second stereo images in which second image data obtained from a second flying object during a second time period different from said first time period is subjected to stereo matching processing to generate second three-dimensional data, comprising:

~~a step of correcting first erroneous data to be corrected~~ including at least noises and losses in said first three-dimensional data by using information of external shapes of buildings obtained from map data including at least information of external shape of buildings to provide first modified three-dimensional data;

correcting second erroneous data including at least noises and losses in said second three-dimensional data by using said information of external shapes of buildings obtained from said map data to provide second modified three-dimensional data;

comparing said first modified three-dimensional data with said second modified three-dimensional data to provide differential information; and

modifying said map data based on said differential information to provide modified two-dimensional map data.

35. (Currently Amended) The method according to claim 34, wherein said step of correcting first erroneous data~~correcting data to be corrected~~ comprises the steps of:

superimposing said first three-dimensional data on said map data;
setting, for each building defining an area in the superimposed map data, first three-dimensional data included in the area ~~within the external shape thereof~~ as the candidate ~~area~~ three-dimensional data of each building;
obtaining, ~~in this~~ for each ~~set~~ area, statistic information from the candidate three-dimensional data included in the area; and
modifying, based on the statistic information in said each area, the first three-dimensional data included in the area to provide first modified three-dimensional data.

36. (Currently Amended) The method according to claim 34, wherein said first image data is obtained from image storing means for storing the first image data.

37. (Original) The method according to claim 34, wherein said map data is obtained from map storing means for storing the map data.

38. (Cancelled)

39. (Currently Amended) The method according to claim 34, wherein said first flying object is an artificial satellite, and said first image data is satellite image data obtained from said artificial satellite.

40. (Currently Amended) The method according to claim 34, wherein said first flying object is an aircraft, and said first image data is aircraft image data obtained from said aircraft.

41. (Withdrawn) A method of processing stereo images in which image data obtained from a flying object is subjected to stereo matching processing to generate three-dimensional data, comprising the steps of:

extracting at least area information of land use on the map of roads/railroads/rivers/sea from map data including at least information of external shape of buildings; and

correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the extracted area information.

42. (Withdrawn) The method according to claim 41, wherein said step of correcting data to be corrected comprises the steps of:

superimposing said three-dimensional data with said area information;

setting, for each building in the superimposed map data, three-dimensional data included in the area within the external shape thereof as the candidate area of each building, and spatially dividing the three-dimensional data in accordance with the area information on said map data;

obtaining, in this each set area, statistic information from the three-dimensional data included in the area;

setting modification conditions of three-dimensional data corresponding to each area information of land use on said map data; and

modifying, based on the statistic information in said each area and said modification conditions, the three-dimensional data included in the area.

43. (Withdrawn) The method according to claim 41, wherein said image data is obtained from image storing means for storing the image data.

44. (Withdrawn) The method according to claim 41, wherein said map data is obtained from map storing means for storing the map data.

45. (Withdrawn) The method according to claim 44, further comprising the steps of:

comparing three-dimensional data stored in data storing means for storing modified three-dimensional data corrected in the step of correcting said data to be corrected with the modified three-dimensional data corrected in said step of correcting data to be corrected; and

modifying the map data stored in said map data storing means based on differential information obtained from this comparison.

46. (Withdrawn) The method according to claim 41, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

47. (Withdrawn) The method according to claim 41, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

48. (Withdrawn) A method of processing stereo images in which image data obtained from a flying object is subjected to stereo matching processing to generate three-dimensional data, comprising the steps of:

analyzing said image data to extract information of external shape of buildings; and
correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the extracted information of external shape of buildings.

49. (Withdrawn) The method according to claim 48, wherein said step of correcting data to be corrected comprises the steps of:

superimposing said three-dimensional data on said information of external shape of buildings;

setting, for each building in the superimposed map data, three-dimensional data included in the area within the external shape thereof as the candidate area of each building;

obtaining, in this each set area, statistic information from the three-dimensional data included in the area; and

modifying, based on the statistic information in said each area, the three-dimensional data included in the area.

50. (Withdrawn) The method according to claim 48, wherein said image data is obtained from image storing means for storing the image data.

51. (Withdrawn) The method according to claim 48, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

52. (Withdrawn) The method according to claim 48, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

53. (Withdrawn) A method of processing stereo images in which image data obtained from a flying object is subjected to stereo matching processing to generate three-dimensional data, comprising the steps of:

- analyzing said image data to extract information of external shape of buildings;
- comparing and combining the extracted information of external shape of buildings with the information of external shape of buildings obtained from map data including at least information of external shape of buildings; and
- correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using this combined information.

54. (Withdrawn) The method according to claim 53, wherein said step of correcting data to be corrected comprises the steps of:

- superimposing said three-dimensional data on said combined information,
- setting, for each building in the superimposed map data, three-dimensional data included in the area within the external shape thereof as the candidate area of each building;
- obtaining, in this each set area, statistic information from the three-dimensional data included in the area; and
- modifying, based on the statistic information in said each area, the three-dimensional data included in the area.

55. (Withdrawn) The method according to claim 53, wherein said image data is obtained from image storing means for storing the image data.

56. (Withdrawn) The method according to claim 53, wherein said map data is obtained from map data storing means for storing the map data.

57. (Withdrawn) The method according to claim 56, further comprising the steps of:

- comparing three-dimensional data stored in data storing means for storing modified three-dimensional data corrected in the step of correcting said data to be corrected with the modified three-dimensional data corrected in said step of correcting data to be corrected; and

modifying the map data stored in said map data storing means based on differential information obtained from this comparison.

58. (Withdrawn) The method according to claim 53, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

59. (Withdrawn) The method according to claim 53, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

60. (Withdrawn) A method of processing images in which image data obtained from a flying object is subjected to stereo matching processing to generate three-dimensional data, comprising the steps of:

extracting at least area information of land use on the map of roads/railroads/rivers/sea from map data including at least information of external shape of buildings;

analyzing said image data to extract information of external shape of buildings;

comparing and combining the information of external shape of buildings obtained from said map information with the information of external shape of buildings extracted in said step of extracting said information of external shape of buildings; and

correcting erroneous data to be corrected including at least noises and losses in said three-dimensional data by using this combined information.

61. (Withdrawn) The method according to claim 60, wherein said step of correcting data to be corrected comprises the steps of:

superimposing said three-dimensional data on said combined information and said area information;

setting, for each building in the superimposed map data, three-dimensional data included in the area within the external shape thereof as the candidate area of each building, and spatially dividing the three-dimensional data in accordance with the area information on said map data;

obtaining, in this each set area, statistic information from the three-dimensional data included in the area;

setting modification conditions of three-dimensional data corresponding to each area information of land use on said map data; and

modifying, based on the statistic information in said each area and said modification conditions, the three-dimensional data included in the area.

62. (Withdrawn) The method according to claim 60, wherein said image data is obtained from image storing means for storing the image data.

63. (Withdrawn) The method according to claim 60, wherein said map data is obtained from map data storing means for storing the map data.

64. (Withdrawn) The method according to claim 63, further comprising the steps of:

comparing the three-dimensional data stored in data storing means for storing modified three-dimensional data corrected in the step of correcting said data to be corrected with the modified three-dimensional data corrected in the step of correcting said data to be corrected; and

modifying map data stored in said map data storing means based on differential information obtained from this comparison.

65. (Withdrawn) The method according to claim 60, wherein said flying object is an artificial satellite, and said image data is satellite image data obtained from said artificial satellite.

66. (Withdrawn) The method according to claim 60, wherein said flying object is an aircraft, and said image data is aircraft image data obtained from said aircraft.

67. (Currently Amended) A recording medium in which a program for processing stereo images is recorded for making a computer carry out ~~stereo image processing~~ a process, the process comprising:

for ~~subjecting~~ first image data obtained from a first flying object during a first time period to stereo matching processing to ~~generate~~ provide first three-dimensional data;

subjecting second image data obtained from a second flying object during a second time period different from said first time period to stereo matching processing to provide second three-dimensional data;

~~wherein said program for processing stereo images makes said computer correct~~ correcting first erroneous data to be corrected including at least noises and losses in the first three-dimensional data by using at least information of external shapes of buildings obtained from map data including at least the information of external shape of buildings. to provide first modified three-dimensional data;

correcting second erroneous data including at least noises and losses in said second three-dimensional data by using said information of external shapes of buildings obtained from said map data to provide second modified three-dimensional data;

comparing said first modified three-dimensional data with said second modified three-dimensional data to provide differential information; and

modifying said map data based on said differential information to provide modified two-dimensional map data.

68. (Withdrawn) A recording medium in which a program for processing stereo images is recorded for making a computer carry out stereo image processing for subjecting image data obtained from a flying object to stereo matching processing to generate three-dimensional data, wherein said program for processing stereo images makes said computer extract at least area information of land use on the map of roads/railroads/rivers/sea from map data including at least information of external shape of buildings, and correct erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the extracted area information.

69. (Withdrawn) A recording medium in which a program for processing stereo images is recorded for making a computer carry out stereo image processing for subjecting image data obtained from a flying object to stereo matching processing to generate three-dimensional data, wherein said program for processing stereo images makes said computer analyze said

image data to extract information of external shape of buildings, and correct erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the extracted information of external shape of buildings.

70. (Withdrawn) A recording medium in which a program for processing stereo images is recorded for making a computer carry out stereo image processing for subjecting image data obtained from a flying object to stereo matching processing to generate three-dimensional data, wherein said program for processing stereo images makes said computer analyze said image data to extract information of external shape of buildings, compare and combine the extracted information of external shape of buildings with the information of external shape of buildings obtained from map data including at least information of external shape of buildings, and correct erroneous data to be corrected including at least noises and losses in said three-dimensional data by using this combined information.

71. (Withdrawn) A recording medium in which a program for processing stereo images is recorded for making a computer carry out stereo image processing for subjecting image data obtained from a flying object to stereo matching processing to generate three-dimensional data, wherein said program for processing stereo images makes said computer extract at least area information of land use on the map of roads/railroads/rivers/sea from map data including at least information of external shape of buildings, analyze said image data to extract information of external shape of buildings, compare and combine the information of external shape of buildings obtained from said map data with the information of external shape of buildings obtained from the analysis of said image data, and correct erroneous data to be corrected including at least noises and losses in said three-dimensional data by using the combined information.

72. (Currently Amended) The stereo image processing apparatus according to claim 2, further comprising:

image storing means for storing said first image data.

73. (New) A method for correcting two-dimensional map data, comprising:

subjecting first image data obtained from a first flying object during a first time period to stereo matching processing to provide first three-dimensional data;

subjecting second image data obtained from a second flying object during a second time period different from the first time period to stereo matching processing to provide second three-dimensional data;

correcting the first three-dimensional data based on the two-dimensional map data to provide first modified three-dimensional data;

correcting the second three-dimensional data based on the two-dimensional map data to provide second modified three-dimensional data;

comparing the first modified three-dimensional data with the second modified three-dimensional data to provide differential information; and

correcting the two-dimensional map data based on the differential information to provide modified two-dimensional map data.

74. (New) The stereo image processing apparatus of claim 1,

wherein said second flying object is the same as said first flying object.

75. (New) The method of claim 34,

wherein said second flying object is the same as said first flying object.

76. (New) The recording medium of claim 67,

wherein said second flying object is the same as said first flying object.

77. (New) The method of claim 73,

wherein said second flying object is the same as said first flying object.